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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,500	11/21/2003	Joseph Chappell	8064-005-CIP-2	8924
32301 7590 07/12/2007 CATALYST LAW GROUP, APC 9710 SCRANTON ROAD, SUITE S-170 SAN DIEGO, CA 92121				
			EXAMINER KALLIS, RUSSELL	
			ART UNIT 1638	PAPER NUMBER
			MAIL DATE 07/12/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/717,500	Applicant(s) CHAPPELL ET AL.	
	Examiner Russell Kallis	Art Unit 1638	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 April 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 10-19 are pending and examined

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Rejection of Claims 16 and 17 are rejected under 35 U.S.C. 102(b) is withdrawn in view of Applicant's amendments.

Rejection of Claims 10-19 provisionally rejected on the ground of nonstatutory obviousness-type double patenting is withdrawn in view of Applicant's filing of a terminal disclaimer.

Claim 15 is identified as a New claim, however the same claim was entered previously and should be identified as previously presented.

#### ***Claim Rejections - 35 USC § 112***

Claims 10-19 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is maintained for the reasons of record set forth in the Official action mailed 12/13/2006. Applicant's arguments filed July 4/13/2007 have been considered but are not deemed persuasive.

Applicant asserts that the present specification establishes that Applicant had possession of the broadly claimed chimeric isoprenoid synthases, and points to examples 4A, 4B, and 5 as examples of active chimeric isoprenoid synthases (response page 6).

Applicant does not describe the broadly claimed genus of chimeric isoprenoid synthases that are comprised of a first isoprenoid synthase and a second and different isoprenoid synthase in their entirety or in portions thereof. Applicant only describes activity in chimeric sesquiterpene synthases CH4 and CH10-CH14 comprising portions of sesquiterpene synthases TEAS (tobacco aristolochene synthase) and HVS (henbane vetispiradene synthase). Moreover, Applicant does not describe the products formed by the undisclosed recombined isoprenoid synthases or chimeric isoprenoid synthases, and hence Applicant has not provided a structure – function relationship for isoprenoid synthases other than the sesquiterpene synthases comprising portions of sesquiterpene synthases TEAS (tobacco aristolochene synthase) and HVS (henbane vetispiradene synthase).

Based upon the disclosure of TEAS and HVS, there is insufficient relevant identifying characteristics to allow one skilled in the art to completely determine the structure of the broadly claimed chimeric isoprenoid synthases, absent further guidance. Since the claimed genus encompasses undisclosed or yet to be discovered sequences, the disclosure of TEAS and HVS chimeric variants CH4 and CH10-CH14, does not provide adequate description of the broadly claimed genus. In view of the level of knowledge and skill in the art one skilled in the art would not recognize from Applicant's disclosure that Applicant was in possession of chimeric isoprenoid synthases, other than chimeric variants of comprising TEAS and HVS, CH4 and CH10-CH14, as broadly claimed.

Claims 10-19 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with

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which it is most nearly connected, to make and/or use the invention. This rejection is maintained for the reasons of record set forth in the Official action mailed 12/13/2006. Applicant's arguments filed July 4/13/2007 have been considered but are not deemed persuasive.

Applicant asserts that the specification provides plurality of working examples that illustrate domain switching strategies and 'possible' reaction products (response page 6).

Applicants claims are not drawn to any particular reaction products, and since Applicant has not taught what products one could expect from the myriad of possible combinations of the broadly claimed chimeric isoprenoid synthases, Applicant has not taught how to make and use the invention as broadly claimed. In addition, applicant asserts that the present invention does not claim effectiveness of a chimeric isoprenoid synthase, but rather the DNA encoding a chimeric isoprenoid synthase (response page 7). Moreover, Applicant has not taught the synthesis of any novel isoprenoid compounds, and since Applicant has not claimed or taught the effect or result of the broadly claimed invention, Applicant has not taught how to make and use the invention as broadly claimed.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

No claim is allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kallis whose telephone number is (571) 272-0798. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Russell Kallis Ph.D.  
June 27, 2006

RUSSELL P. KALLIS, PH.D.  
PRIMARY EXAMINER

*Russell Kallis*